Weekly Report POS537
by Oliver Wurl (chief scients) and Nur Ili Hamizah Mustaffa (co chief scientist)

14th September 2019, Saturday

Logistic day: All scientists arrived in Malaga. We received a warm welcome from the Captain and the crew onboard. Unpacked boxes and setup the labs.

15th September 2019, Sunday

Logistic day: Unpacked boxes and setup the labs.
Filtration system and all instruments were setup in the laboratories. Everyone is happy with the space provided. It was discovered that no onboard Milli Q system was available and thus approximately 20L of Milli Q was brought from Malaga institute for Oceanography.

16th September, Monday

Leaving Malaga port at 10:00 am local time and heading north to our study area. Everyone is excited for the science to begin.
All six mesocoms were inflated on the deck
At 15:20, everyone gathered on the main deck for safety training by the second officer.
After dinner one of the scientist, Rodrigo Goncalves from Argentina gave a short presentation about his project.

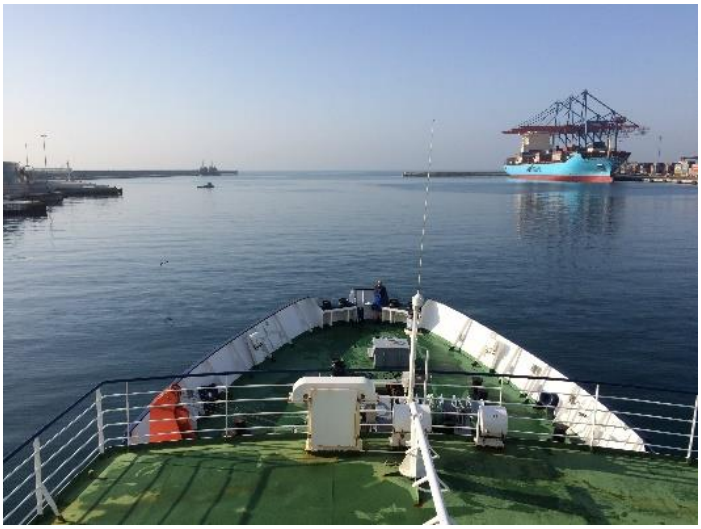


Photo: Mustaffa NIH

17th September, Tuesday

Second day at sea. Planktology team prepared their bottles and covered their boxes with different colored foils for the on-board incubation experiment. The boxes were left overnight on the deck and the water temperature was observed every 20 minutes. They found that water temperature in the incubation boxes increased by 4°C during mid-day and decided to increase the water inflow. Together with Planktology team, Rodrigo prepared his boxes for zooplankton incubation experiment.



Photo: Mustaffa NIH

Meanwhile the mesocosm team discovered a leak in one of the mesocosms and it was patched in time for it's planned deployment the following day.

18th September 2019, Wednesday

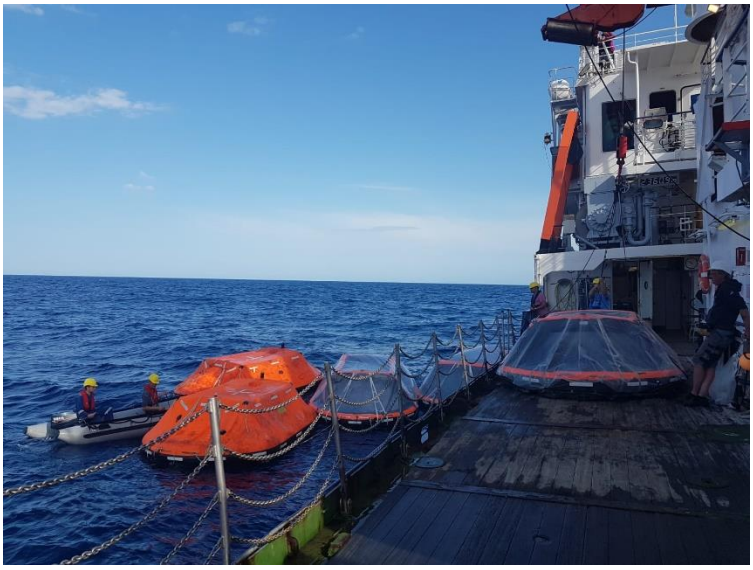
Third day at sea. After breakfast, first CTD cast was deployed. Seawater samples from 10 different depths were collected and filled 200 cell cultures bottles with and were treated with three light treatments, i.e., blue, red and green and a control treatment (grey). This experiment aims to understand how phytoplankton community at different depths respond to different light penetration in the ocean. As a group who study the upper sea surface layer, deployment of CTD is not within our normal routine. We thank the crew for helping us with the deployment.

The mesocosms were cleaned and UV foils were prepared to be attached on top.

19th September 2019, Thursday

Phytoplankton nets were deployed between 40 and 50 m depth followed by manta net to collect plankton at the surface.

Meanwhile, planktology team measured the optical density of each incubated bottles in the chemical lab.



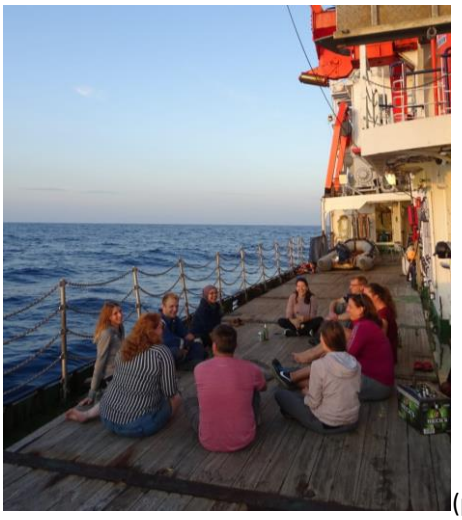

(photo: Robinson TBR and Jeager L.)

First deployment of all six mesocosms in the water for logistical testing, due to incoming bad weather the mesocoms had to be deployed ahead of schedule and whether they can and will be recovered in the morning is unclear and dependent on weather conditions.

20th September 2019, Friday

06:00 am, second CTD cast was deployed. Dr Isabell Ferrera, a scientist from Malaga institute for Oceanography collected water at two depths (100 meter and surface) for micro plastic analysis.

One day mesocosm experiment started. Two scientists went on a small boat and collected the sea surface microlayer (SML) and one-meter bulk water at five different time points. Scientists from Marine Interface group (ICBM University Oldenburg) collected water for TEP analysis and optical density measurement. Meanwhile Dr Ferrera and her team collected water for DNA analysis, flow cytometry and enzyme activity. Dr Mustaffa from ICBM University Oldenburg filtered the collected water for extracellular carbonic anhydrase (eCA) analysis. Despite the limitation of sampling volume using dipping glass plate technique, we manage to provide everyone with sufficient volume they needed. Everyone is happy and enjoy every meal onboard.


(photo: Jeager L)